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SOCIETY OF ARTS.

FRIDAY, FEBRUARY 4th, 1853.

NINTH ORDINARY MEETING,

Wednesday, February 2nd, 1853.

The Ninth Ordinary Meeting of the Society was held on Wednesday, the 2nd, Major-General Sir Charles Pasley, K.C.B., Vice-President, in the Chair.

The following were elected Members :

Bayne, A. D., Norwich.
Beardish, Isaac, Holmfirth.
Drew, John, 13, New Burlington-street.
Fothergill, Mark, 204, Upper Thames-street.
Fuller, George Leedham, St. Mary's road, Peckham.
Harker, John William, 24, Upper Barnsbury-street, Islington.
Phillips, Sir T., Bart., Middlehill, Broadway, Worcestershire.
Phillips, Robert, Cockspur-street.
Quin, Charles William, 25, Clarence-street, Islington.
Towers, George Augustus, Hertford.
Turrell, Henry Stein, Brighton.
Webster, Frederick, 38, Weymouth-street, Portland-place.
Westall, William Mawley, Love-lane, Aldermanbury ;

and the names of six candidates for membership were read.

A paper was read on Chromatic Photo-printing, being a mode of printing textile fabrics by the chemical action of light, by Mr. R. Smith, of Blackford, Perthshire.

The author proposes to employ the chemical agency of light in dyeing or staining textile fabrics ; the cloth, whether of wool, silk, flax, or cotton, being first steeped in a suitable solution, then dried in the dark, and subsequently exposed to the action of light, those parts which are to form the pattern being protected by pieces of darkened paper, or some other suitable material, attached to a plate of glass. When the desired effect is produced, the time for which varies from two to twenty minutes, according to the nature of the process, the fabric has to be removed, in order to undergo a fixing operation, whilst a fresh portion of it is exposed to light. This may easily be effected by the use of very simple mechanical arrangements, so that a number of photographic printing engines may be placed side by side, and superintended by one person. From the trials which Mr. Smith has made he believes that even the diffused light of a cloudy day will have power enough for the operation, though of course a longer time will be required for its perfection than in a bright and sunny day.

In order to obtain a pale blue or white pattern upon a blue ground, Mr. Smith uses solutions of citrate or tartrate of iron, and ferrocyanide of potassium ; steeping the cloth subsequently in a dilute solution of sulphuric acid. Browns and buffs are obtained by using a solution of bichromate of potash, the excess of salt in the parts not acted on by light, being afterwards either washed out, leaving those portions white, or decomposed by a salt of lead which forms a yellow chromate of lead. By combining these two processes with the use of madder, log-wood, and other dye stuffs, a great variety of tints may be obtained.

The secretary stated that though the principles of these processes were all well known, yet that their application to the art of dyeing as proposed by Mr. Smith, was ingenious and apparently new. Whether the plan could hereafter be practically employed would remain to be seen ; all that could at present be said of it was, that it certainly merited the attention of dyers and calico-printers, and that though now little more than a suggestion, it might possibly hereafter lead to a new department of dyeing.

A paper was then read by Mr. Wilkinson on Fire-arms. He commenced as follows :

It may be considered that any discussion on Fire-arms and Projectiles is unsuited to the peaceful character of the Society of Arts, but I think it will be found that a knowledge of the use of those implements now before you is better calculated to maintain peace than any harangues on the impolicy of war to the English, whose habits and pursuits have always been averse to it. Those who wish us to be totally defenceless place themselves in the dilemma of being either pitied as madmen, or despised as traitors to their country. It has ever been the opinion of the most eminent men in all countries, in which are included divines, statesmen, and generals, that "*to be always prepared for war is the surest way to avoid it.*" This sentiment has been expressed in a variety of ways, but never more concisely than in the words just quoted of Archbishop Fénélon.

Now it is certain that we never can be prepared for war if we neglect to keep pace with the numerous improvements made by foreign nations around us ; and it is equally certain that we have no desire to avail ourselves of them except in our own defence.

My object, however, this evening is not to enter into any controversy either on peace or war, but simply to explain such improvements as have recently been proposed, and wholly or partially adopted.

In order to form some conception of these improvements, I must very briefly allude to the earliest Fire-arms which are still in use in India and various parts of the world. Commencing with the different modes of ignition, Mr. Wilkinson then proceeded to give a rapid sketch of the progressive steps by which Fire-arms have arrived at their present state of comparative perfection ; he described and exhibited, first, the Matchlock, invented about the beginning of the sixteenth century ; previous to which hand-guns were fired by a lighted match applied to the touch-hole in the same manner as to cannon.

Second, the Pyrites Wheel-lock, introduced into this country about the time of Henry VIII., and continued to Charles II. ; in which ignition was obtained by the rapid revolution of a steel wheel against a pair of iron pyrites.

Third, the Flint Lock, introduced about 1692, and generally used up to the close of the last war.

Fourth, the Percussion Lock, invented by the Rev. Mr. Forsyth, and patented by him, April 11th, 1807, was generally introduced into our army, 1840.

He then proceeded to explain the nature of the Rifle, and the theory of Projectiles, which was thoroughly illustrated by diagrams.

Mr. Wilkinson stated that it has been calculated by French writers, that with the old flint musket and spherical bullet during the last war, the maximum effect was only one in 3,000, either to kill or wound; and one in 10,000 was the minimum. So that in some engagements 10,000 ball cartridges were expended to kill or wound one man; and a writer in the *Times* stated, a short time since, that 60,000 cartridges had been fired at the Cape, and only twenty-five Kaffirs killed; so that, after all, war is not more dangerous than many other professions. He observed, however, that this would not be the case in any future warfare; it will be much more destructive for the time, but of shorter duration.

The percussion musket effected very little improvement in the accuracy or range of the bullet, but it produced much greater certainty of fire. It is wholly to the introduction of rifles and elongated projectiles that the recent improvements are due. We were told by Robins a century ago, that this would be the case, but it generally requires a hundred years to convince any Government; and we might still have gone on until defeated, had we not been fortunate enough to obtain, at the precise moment when most required, a Master-General of the Ordnance like Lord Hardinge, determined to investigate, and to give every invention a fair trial.

Mr. Wilkinson then gave a brief history of the changes in the form of the bullet introduced more than twenty years ago, by M. Delvigne, though suggested nearly a century since by Robins, who pointed out that the spherical form was not that best suited for projectiles. Lately the cylindrical-shaped bullet has attracted great attention from the ingenious modification of it, invented by Capt. Minie, who added a small iron capsule to the lower end of the bullet. Lastly, Mr. Wilkinson described his own improved bullet, the form of which is *cylindro-ogivale*, having two deep grooves round the base; and the novelty of which consists in the bullet being expanded in the act of discharging the rifle, although the bullet is perfectly solid.

At the close of his paper, the author explained the electro-magnetic chronoscope, a beautiful and very ingenious mode of measuring the flight of projectiles, invented by Professor Wheatstone. The principle on which this was effected, consisted in the interruption of an electric current, by the breaking of a fine wire, when the gun was fired, the circuit being again completed by another arrangement when the target was struck; whilst a clock, with suitable stop-hands, was employed, to indicate the interval of time between the discharge and the blow on the target.

A paper was then read, on Winiwarter and Gersheim's patent "gun-primers," and composition for fire-arms, by Mr. Winiwarter, of Vienna.

The various applications included in Gersheim's patent all more or less depend on the nature and properties of their new composition powders; which, at the same time that they may be employed to replace gunpowder as a propelling power, may also be used instead of fulminating powder, as a means of inflaming or firing. These patent explosive compositions consist of mixtures of various well-known explosive substances; namely, chlorate of potash, fulminating mercury, fulminating zinc, amorphous phosphorus, and binoxide of lead. But to each of these different mixtures a solution of gun-cotton or collodion is added as a cement, and the application of this substance is the chief peculiarity of the invention.

The patent percussion primers are manufactured in various shapes, to suit the different purposes to which they are applied; the composition is moulded into any required form, dried, and then covered with a film of varnish and bronze powder. Thus, in fact, the whole of the pellet, whatever may be its shape, is entirely formed of the detonating material, and the use of the ordinary copper cap is wholly dispensed with; whilst, in consequence of the peculiar nature of collodion, and its insolubility in water, the very material employed to bind together the different components of the powder acts as a waterproof varnish,—at the same time binding them together, and protecting them from the action of moisture.

Although these percussion primers ignite readily, either by a blow or by friction, yet they are much less easily exploded than the ordinary percussion caps,—a fact which is readily proved, as they may be crushed in a vice, or between the teeth, without any chance of their exploding. A second important peculiarity is their being not liable to injury from damp; the collodion so perfectly protects the other explosive components of the powder from the action of water, that they may be made to detonate even under water. Thirdly, the patent primers, though they burn quite fast enough, give out a more lasting flame than ordinary copper caps; they readily ignite gunpowder, even through cartridge paper, and by the more perfect and complete explosion of the powder which they cause, enable a saving in the charge of gunpowder to be made.

The primers are now manufactured of four shapes, namely as round shot, as small disks, and in the form of nails either small for muskets, or larger for cannon. Those formed in the shape of shot, or of small nails, are suited for use in ordinary percussion guns; all that is necessary for their use is somewhat to increase the size of the nipple. It is necessary to observe that, though the upper part of the nipple must be made so large that the primer can be put into it, the channel for the flame must be very small, or the hammer might possibly be thrown back by the power of the discharge. In the ordinary copper cap this is a matter of much less importance, because the cap itself for the time closes the aperture of the nipple; but with the patent primers this is not the case, and if the primer does not fit the nipple very accurately, or the channel of the nipple is not very tight, the gun is liable to miss fire.

The disks, or pellet-shaped primers, are chiefly intended for use in "needle rifles," either as priming or even a charge; they may be used either with weapons loaded at the muzzle, or at the breach. It has been objected that the shot-shaped primers are inconvenient from their small size and the consequent difficulty of dropping a single one, each time the gun has to be fired; in order to meet this difficulty, a little reservoir has been contrived, which moves backwards and forwards by the action of the trigger, depositing every time when the lock is cocked a singler primer in the nipple.

COL. PORTLOCK bore testimony to the clear and satisfactory manner in which Mr. Wilkinson had laid before the meeting the historical facts, and the principles connected with projectiles. There was no doubt that Mr. W. was correct in his remarks upon the tardiness of the English in adopting a new system; and in the fact that we were returning to the study of principles which were promulgated 100 years ago. It required, however, a considerable amount of study and experience to establish the soundness of those principles. A cautious people like the English naturally hesitated to adopt novelties upon the mere authority even of the most eminent men; and the spread of general knowledge and habitual research which characterized the present day, had but recently sprung up. Improvements in civil engineering or architecture were readily brought before the members of those professions, and their value at once proved and adopted on their merits, without reference to bygone authority. In military matters we had not yet reached that point; any decision once arrived at could not be overthrown without the sanction of the Commander-in-Chief and the Master-General of the Ordnance, based upon the Reports of Committees, which were not always unanimous. If, however, undue caution had been shown in the admission of the principle of elongated balls, the very fact that, so soon after its adoption, the further improvements of Mr. Wilkinson had been admitted, was a proof that a more satisfactory system was growing up, and that military mechanics and engineering matters would be henceforth tested more by their real importance than by the force of any past authority. (Hear.) With respect to the form of projectile, it was plain that every axis of a spherical ball was equal; and therefore if rotation should be formed upon any one axis, there was no tendency to restore the rotation upon any other axis. In the elongated ball, however, the true or geometrical axis might be assumed to be nearly coincident or parallel with the axis of the barrel; so that if rotation were established upon any other axis, even after the ball had left the rifle, there would be a tendency to restore rotation round the true axis, or in the direction which the ball ought to take. Captain Minie's invention was one of very great beauty; but Mr. Wilkinson's method of causing the ball to expand, so as to fill the grooves of the rifle, was free from some of its evils, and possessed all the simplicity of the common musket ball. So far there had manifestly been a movement in the right direction; and it might lead to greater results than even Mr. Wilkinson expected. It appeared even to point to an improvement in cannon balls. These, from the purposes for which they were intended, could not be formed of lead; but Mr. Wilkinson's improvements might lead to an application of the Minie principle, though in a reverse order to that in which iron was introduced into the musket ball. It had been too much the habit to over-rate the bravery, and to under-rate the scientific knowledge, of the British soldier; but it was beginning to be felt that knowledge was no impediment to bravery. It had been said that too much study would interfere with the *dash* of the soldier; but under the term *dash* there lurked a fallacy, and successful dash too often obtained the credit due to less success united with more talent. The time formerly occupied in loading the rifle was an impediment to its adoption; but by the improvements now introduced, a body of soldiers, in moving, as they must, over a certain extent of ground, would be enabled to charge an advancing body in a state already broken and disheartened, when they arrived at that point where the bayonet could be effectually employed; and neither the courage of the soldier nor his power of using the bayonet would be diminished by the advantage previously gained by a rifle capable of being loaded with the same facility as the common musket. In conclusion, Colonel Portlock urged the importance of the rifle as a defensive weapon, especially in the hands of civilians, who, in the case of invasion, must, without the advantages it afforded, be far inferior antagonists to organized soldiers.

The CHAIRMAN referred to his own observation of the practice with the Minie rifle, in which, at 200 yards, every shot was put into the target; a remarkable contrast with the old musket, the fire of which at that distance was very uncertain. The improved facility of loading introduced by Mr. Wilkinson, and other ingenious gun-makers, was a great advantage. He did not, however, think these improvements would change the fate of war; skirmishers on each side would be thrown out, and one or the other must give way—when the troops of the line would come forward, and, however the term *dash* might be reprobated, battles would never be decided at a great distance; it must come to the bayonet at last.

Mr. VARLEY, jun., inquired if Mr. Wilkinson's bullets were intended to be fired with any covering. He had found the Minie bullet more effectual with a covering than without. He also asked whether the new bullets ever turned round, so as to enter the mark sideways, from the tendency of all bodies, in spite of the force of gravity, to revolve upon their shorter axis.

MR. WILKINSON said he preferred to use nothing but the naked powder and ball; the latter being rubbed with Russia tallow, or other grease, to fill the grooves. The pressure upon the grooves squeezed out the grease, which lubricated the whole extent of the bore, and diminished friction; so that 100 rounds could be fired as easily as one. The bullets were never found to turn; their tendency to do so from revolving on the shorter axis being overcome by the air entering the grooves; just as a spinning-top, when moving unsteadily, was righted by the action of the air. To explain this, however, in detail, would require almost another lecture.

CAPTAIN OWEN inquired the exact difference between the Swiss ball and that of Mr. Wilkinson.

MR. WILKINSON explained a difference in size, &c., which greatly facilitated the loading on his plan. In reply to an objection to the use of grease in hot countries, Mr. W, stated that, with the thermometer at 130°, 100 rounds had been fired in thirty-six minutes; the barrel and other iron work being so hot that it could not be handled. The grease in that case was still used, but with the addition of about one-eighth of beeswax, which entirely overcame the difficulty.

CAPTAIN OWEN referred to his own experience in the war at the Cape, in 1848, as some justification of the reluctance to adopt novelties. The 7th Dragoons were then supplied with the ordinary two-grooved rifles instead of their carbines: but it was found necessary to provide them with smooth bore ammunition—that originally supplied fitting too tight. The newspapers had ignorantly condemned the Government for sending out a regiment of dragoons with carbines, whereas the local corps were the Cape Mounted *Rifles*, arguing that the latter weapon was the most effective. In fact, however, the Cape Rifle Corps were armed with two-grooved carbines, and these were generally allowed to be the

best weapons for Caffre warfare; in which rapid loading and firing was the chief requisite.

Thanks were voted to Mr. R. Smith, Mr. Wilkinson, and Mr. Winiwarter.

It was announced that on Tuesday evening next an extraordinary meeting of the Society would be held, at eight o'clock, when a paper would be read by Mr. Yapp, on the proposed reforms suggested by the Colonial and International Postage; after which a discussion would be invited.

LECTURES ON THE MANUFACTURE OF COTTON.

The Council have arranged with Mr. Frederick Warren, of Manchester, to deliver a course of Four Lectures on the Cotton Trade and Manufacture. These Lectures will be given on the 14th, 17th, 21st, and 24th of this month, at eight o'clock in the evening. Members of the Society desirous of attending are requested to apply for their tickets at the Society's House, on or before Wednesday, the 9th. Members may obtain tickets for their friends at Sixpence each. After the 9th inst., any remaining tickets will be issued to the public at One Shilling.

LEGAL POSITION OF INSTITUTES.

First Report to the Council of the Society of Arts from the Institutes' Committee, on the Legal Position of Literary and Scientific Institutes.

The Institutes' Committee has long had under consideration the very important subject of the Legal Position of Institutes, with a view to obtain such legislative facilities as may be requisite for its improvement.

The obscurities and imperfections of the Act 6 and 7 Vict. cap. 36, which had for its object to exempt Scientific and Literary Societies from local rates, have been fully exhibited in the courts of law, and have received much attention from learned persons and others, interested in such societies, as well as from the Provincial Unions of Institutes, and particularly from the Yorkshire Union.

On the one hand, it has been forcibly argued that the legislature's obvious intention to exempt the Institutes from local rates has been defeated by the faulty phraseology of the Statute, and that therefore the Statute should be amended: and, on the other hand, it has been suggested that the principle of exemptions is in itself unsound; that it is inconsistent with the dignity, and therefore not really conducive to the interests, of the Institutes, that their property should be exempted from charges to which other property is liable; and, therefore, that the Act of 6 and 7 Vict. cap. 36 should be, not amended but simply repealed.

Your Committee appreciates the importance of these questions, and has introduced them into this Report with a view to elicit the views of the Institutes on the subject, and a consideration and discussion of them in the Journal.

At present, your Committee desires to direct attention to a subject of paramount importance—the legal insecurity of the Institutes and of their property.

All persons who have been concerned in the establishment of an Institute are aware how very difficult it is to obtain a suitable site for the building, to convey it in trust for the appointed uses, and to secure the personal property in a mode not open to serious objection.

Legislative facilities have long been abundantly afforded for the conveyance and endowment of sites for churches. Since 1837 numerous statutes have been passed to afford such facilities in the case of normal and elementary schools; but no such facilities have been granted to Institutes. They are, however, schools of an important kind—a necessary complement to other schools; and it is not easy to see why the whole of the facilities which Parliament has given, under the School Sites Act, to schools, should not be rendered applicable to Institutes. It is to be hoped that such a legislative recognition of their value would not now be withheld; and accordingly it is proposed to prepare a bill (the heads of which your Committee will print), which will contain (*inter alia*) a clause declaring that the Acts cited in the margin, being the School Sites Acts now in force, shall be applicable, in all respects, as fully and completely, to Institutions as if they were the schools originally contemplated in those Acts.

4 & 5 V. c. 38.
7 & 8 V. c. 37.
12 & 13 V. c. 49.
13 & 14 V. c. 28.
14 & 15 V. c. 24.

If such a clause should become law, nearly all the restrictions and expensive processes which in this country impede the transfer of real property, and which in numerous cases absolutely prevent the due conveyance of the sites of Institutes, would become inoperative against the parties to a conveyance of land or buildings for an Institute. Such property might then be granted, conveyed, or enfranchised, for such an object, by a simple and inexpensive form, by any person beneficially interested and being seised in fee simple, fee tail, or for life; by any lord or lady of a manor, in respect of common land; by the officers of the Duchies of Cornwall and Lancaster; by clergymen, in respect of glebe; by any person equitably entitled to but not holding the legal estate in land; by any infant or lunatic, through his guardian or committee; by any justices of the peace; corporations; trustees or commissioners for public, ecclesiastical, parochial, charitable, or other purposes. Moreover, the legal estate in the Institutes might be vested in any corporate body or bodies, sole or aggregate, lay or ecclesiastical, without licence to hold lands in mortmain, without renewal of deeds, and without risk of an expiry of trusts. An efficacious and cheap remedy would be provided against any unlawful "holding over" of the premises on the part of any resident officer. The death of a grantor within twelve months would not invalidate a grant. The conveyance of copyhold by the lord and by the tenant, in one deed, would vest the freehold in the grantee without surrender or admittance in the lord's Court. Conveyances might be made to trustees and to their successors in office.

The Institutes also suffer severely from some of the graver evils of the law of partnership. The property of an Institute is the property of all its members; in the eye of the law they are partners; and, if any one (or more) of them be dishonest, and attempt to despoil them of their property, their remedy is a suit in Chancery—the member is a partner; and partnership causes are of equitable not legal cognizance. And, moreover, the whole of the remaining members must be separately joined in the suit; for the Institute, not being incorporated, cannot sue or be sued in its collective capacity, under its proper title, or in the name of its principal officer. These defects might easily be remedied by well-conceived enactments; and secretaries, collectors, or other functionaries, misappropriating the funds or other property of an Institute, might be declared guilty of a misdemeanour, in accordance with the precedent of the Savings Bank Act, 7 and 8, Vic. c. 83.

The last point to which, in the present Report, your Committee desires to direct attention is the anomalous and improper position in which all Institutes are placed in reference to the Acts of 39 Geo. III., cap. 79; and 57 Geo. III., cap. 19.

Those statutes provide, that every house, room, or place in which any lecture or discourse shall be publicly delivered, or any public debate shall be had, on any subject whatever, to which any person shall be admitted by payment of money, or by any ticket delivered in consideration of money, or in consequence of having paid, or agreeing to pay, any money, shall be deemed a disorderly house or place, unless the same shall have been previously licensed by the Justices of the Peace in Quarter Sessions. That every such licence shall continue in force for not more than a single year; and may be revoked at any time within the year; that any Justice of the Peace may at any time demand admittance to any such lecture, discourse, or debate, whether in a licensed or unlicensed place; that the person by whom the house, room, or place is opened and used for lectures, &c., without licence, shall, on conviction, forfeit the sum of 100*l.* for every day of such opening, and be otherwise punished as the law directs in the case of disorderly houses; that every person who shall manage or conduct the proceedings, who shall act as president or chairman, who shall debate, discourse or lecture, who shall pay or receive money, or deliver or receive tickets for admission, or who shall refuse admittance to the Justices, shall for every such offence forfeit the sum of 20*l.*; such penalties to be paid on conviction to any one who will sue for them; but the Attorney General to have power of staying the proceedings at any time.

Few persons probably are aware that any provisions such as these are at this day in force. They may have been necessary when those statutes were passed, but are now unnecessary, and improper, and ought to be immediately repealed, in so far at least as they may affect the Institutes. In 1846, a bill to amend those statutes was brought into the House of Commons by Mr. Duncombe, Sir De Lacy Evans and Mr. Aglionby. It was considerably altered in Committee, but finally became law—viz., the Act 9 and 10 Vic., cap. 33. It recites that the provisions of the Acts 39, Geo. III., cap. 79 and 57, Geo. III., cap. 19, have given occasion to vexatious proceedings by common informers; and merely enacts that in future no proceedings under those acts shall be commenced, unless in the name of the law officers of the Crown. This amendment appears to your Committee to be insufficient to meet the requirements of the case. In the present state of public opinion, no law officer of the Crown could proceed against an Institute under the provisions of those statutes; but the Institutes ought to be wholly exempted from such provisions; and your Committee is of opinion that the exemption should now be secured by the bill which is proposed to be framed.

HARRY CHESTER,
Chairman of the Committee.

January 26th, 1853.

INSTITUTE LECTURES.

MR. G. W. YAPP will communicate with those Institutions in union which require Lectures on Practical Art Education. Mr. Yapp's Lectures will be illustrated by examples, recommended by the Department of Practical Art. Institutions requiring Lectures on this subject will have the goodness to communicate with him.

COLONIAL CORRESPONDENCE.

JAMAICA.

THE following paragraphs are extracted from a letter just received from Captain Grey, R.A., the Honorary Secretary of the Society of Arts at Jamaica.

"The Jamaica Society looks forward with great pleasure to the communications of which some expectation is held out in your letter, and, in the outset, would esteem highly any useful information as to the prices which might be expected in the English market for any of the tropical products which have not hitherto formed part of the principal exports of this or of the neighbouring colonies; as, for instance, any portions of the cocoa tree, or of the fibres or tissue of the plantain, aloa, penguin, &c., or for vegetable oils, gum, and resins; for medicinal senna of a fine quality, for vanilla, for quassia amara, and for ornamental woods.

"The latest inventions and machinery for raising water from depths within the sphere of action by pressure of the atmosphere; and the most scientific and economical methods of making and preserving tanks and reservoirs of water for irrigation and for filtering and of forming flat or terraced roofs and water-pipes, are objects of great interest also. The state and progress of the law of patents in England; the easiest methods and most recent practice of chemical analysis of soils and minerals, and of smelting, refining and assaying metals.

"PROCEEDINGS OF THE JAMAICA SOCIETY OF ARTS.

October 23rd, 1852.

"The Governor thanked the gentlemen present for their attendance, in compliance with the request which he had made for the purpose of determining in what way the views of the Society of Arts in London, of which his Royal Highness Prince Albert was the President, could be most effectually promoted in Jamaica.

The Governor then read the circular of the 24th April, 1852, which he had received from the Secretary of State, and the enclosed communication from the Society of Arts, of which he mentioned that copies had been published in Jamaica, in the *Morning Journal* of the 5th of the present month of October.

"The Governor also read the dispatch, No. 64, July 24, which he had written, in answer to the Secretary of State's communication, and stated the steps which had been taken with a view to form a subordinate Society of Arts in this colony, and moved the following resolutions:

"1. That the gentlemen now present do form themselves into an association under the name of the Jamaica Society of Arts, to which all present expressed their assent by their written signatures.

"2. That that the meetings of the Society be held on the last Saturday of every month, at half-past twelve o'clock, in King's House; which was also unanimously assented to.

"3. That each gentleman who wishes to remain a Member of the Society shall contribute one shilling a month, which may be paid to the Honorary Secretary in advance for the remainder of every current year, ending on the 31st December, or in monthly payments; which resolution was also passed unanimously.

"Captain Grey, R.A., and A.D.C. to the Governor, assented to act as Honorary Secretary.

"The Governor then read the heads of a letter which he proposed should be addressed, through the Secretary of State, to the Society of Arts in London, by the packet of the 11th November, and undertook to lay the letter before the next meeting in a more perfect form for their approval, and gave notice that he should then propose, that the Society should divide itself into a certain number of Standing Committees, each taking a separate department or branch of inquiry and investigation under its special care; and he requested that gentlemen would consider, in the interval, in what departments they could respectively render the most efficient service, and what other gentlemen resident in the island, they should most desire to have associated with them in their investigations.

"Thanks were voted to the Governor upon the motion of the Vice-chancellor, and the meeting then adjourned to Saturday, the 30th October, at half-past twelve o'clock p.m."

October 30th.

"The Governor read to the Meeting two circulars from the Secretary of State, respecting the specimen of dried plantains, sent by Colonel Reid to the Exhibition, and as to the method of preparing them in Mexico; also a despatch from the Secretary of State, dated 26th June, 1852, containing the Duke of Richmond's suggestions as to guano.

"The meeting then determined upon the appointment of seven Committees, to whom respectively the subjects hereinafter named should be assigned for investigation, viz.:

"1. The state of the cultivation and manipulation of the principal exports of the island, viz., Sugar and Rum, Coffee, Pimento, Arrowroot, Ginger, &c., and generally the present state of the Agriculture of the Colony, and the practicable improvements that may be suggested.

"2. The Timber and Ornamental Woods.

"3. The capabilities of the Island for irrigation and hydraulic engineering; the state of Water-reservoirs, and art of making Tanks, Water-pipes, Terraced-roofs, and as to the best sorts of Pumps.

"4. The Minerals.

"5. The Medicinal Waters, Plants, Gums, Oils, and other medicinal substances.

"6. The Manufactures, Handicrafts, and Trades of the Island, besides those immediately connected with Agriculture, and the new ones that might be usefully introduced.

"7. The Vegetable products of the Island which, it is supposed, might be exported as raw material, but which are not yet used in that way.

"And the names of the gentlemen who, it was considered, might appropriately be appointed to each Committee, were read, and

"A resolution was proposed and agreed to, that each Committee be requested to collect specimens of objects of interest for transmission to England.

"The Meeting then adjourned."

HOME CORRESPONDENCE.

EXCHANGE OF ILLUSTRATIONS.

Leek, Jan. 29th, 1853.

SIR,—At the Mechanics' Institution, in this town, we have lanterns and apparatus for dissolving views with five inch lenses, and also a small assortment of views, which, having been several times used here, are of little further service to us; and we find that to *purchase* fresh views for each separate lecture would be more expensive than we can afford. I should be glad, therefore, to ascertain through the medium of your Journal, whether arrangements could not be made by us with other Institutions or individuals, for the exchange or loan of views for a short period from time to time; and I should be happy to communicate with any party as to the terms.

W. CHALLINOR.

PHOTOGRAPHIC CAMERAS.

Parkstone, Jan. 29th, 1853.

SIR,—The want of artistic effect so much complained of in photographic pictures cannot be attributed to the camera, because the views in a camera, as seen by direct vision, are a true and faithful representation of Nature itself; always excepting chromatic and spherical aberration, with which we must contend as best we may. But in sun pictures there is a third source of error in actinic aberration, or the difference of refrangibility between the actinic or chemical, and the pure light rays.

I would propose to substitute for the clear white achromatic object-glass, one of a suitable deep blue tinge, which would oppose an effectual barrier to all the red and yellow rays. Sun pictures would then be much more uniform in appearance and tint, and would possess that artistic effect, the absence of which is so very detrimental.

The great reduction in light would be of no importance, because photographs are formed by the actinic rays alone, which penetrate through even very dark blue media.

HENRY W. REVELEY.

TONNAGE OF SHIPS.

Millwall, Jan. 31st, 1853.

Sir,—I was rather surprised to see it stated by Mr. Reveley that by the old law, the depth of a vessel was taken into account in calculating the tonnage. I am quite aware that the distance between the wing transom and the rabbit of keel was taken to allow for the rake of stem port, but I have yet to learn that the depth from transom to keel is the depth of the vessel; in fact, if you were to build two ships of the same length and breadth, but one of them half as deep again as the other, the deeper ship would be about one per cent. less tonnage than the other. Hence we have those boxes with the ends rounded off, termed wall-sided ships.

With regard to my second error, it appears only one of omission. If I had said after the word "boys," "and pay tonnage and light dues for every 100 tons' register," I do not think Mr. R. would have had much to rectify. But I certainly should pause before I charged so respectable a body as the ship-owners of this country with deliberate fraud.

I cannot agree with Mr. Reveley, that the new law of tonnage is utterly at variance with improvement; for although it is not perfect, yet by taking the breadth and depth at different parts of the hold, it is an approximation to the truth, and every careful observer of the progress of ship-building must have noticed the very great improvement within the last few years. Under this law the *Stornaway*, *Challenger*, and other ships have been built, that have not only made their passages in less time, but have turned out from thirty to fifty per cent. more cargo than their American competitors; and I think the Society of Arts would be conferring a very great benefit on this country if they could bring their powerful influence to bear in assisting to obtain the removal of those laws which either compel the ship-owner, in self-defence, or allow him, from motives of avarice, to fetter the hands of our ship-builders.

J. P. Roberts.

COMMUNICATION BETWEEN GUARD AND DRIVER.

Sir,—At page 119 of the "Journal of the Society of Arts," you give an account of a means of communicating between guard and driver, as adopted by the Brighton Railway Company. If you will refer to page 500 of the "Railways of Great Britain and Ireland," a copy of which is to be found in the library of the Society of Arts, you will discover that this is the plan I recommended thirteen years ago, and which is in extensive use on the Continent, especially on the Prussian railways. It is so much the custom now-a-days for persons to adopt the designs and inventions of others without making any acknowledgment, that I shall feel obliged if you will insert this communication, which may be the means, perhaps, by its further introduction, of saving many valuable lives. I am, Sir,

Yours, &c.,
Francis Whishaw.

ART OF ENAMELLING.

Sir,—In the extract from the article Enamelling, which you did me the honour to quote in your last *Journal* from my Cyclopædia, there is a small omission in one of the tables, which, however, is of such importance, that if my fellow-members attempt to compound enamels according to the proportions given in your quotations, they may meet with loss and disappointment.

In my article directions are given for compounding an alloy of lead and tin in five proportions, forming respectively the alloys No. 1, No. 2, No. 3, No 4, and No. 5. In the receipts for opaque enamels (also five in number), one or other of these alloys is used, and by omitting in your quotation the No. 1, No. 2, &c., it appears to be a matter of indifference which of the five alloys is to be used. It is, however, of great importance that each one of the five be used in its right place. The table of receipts for opaque enamels should stand thus:—

	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.
Silica.........	3 parts	3 parts	3 parts	10 parts	3 parts
Alloy	(No.1) 4	(No.2) 5	(No.3) 6	(No.4) 18	(No.5) 7
Nitre	2·5	2	1	4	0
Borax	0	1	1	1	1

Charles Tomlinson.

LECTURES.

Jan. 21st, 1853.

Sir,—I regret to say that our Directors have not been able to avail themselves of the "Schedule of Lectures for the Spring Session of 1853." Understanding that a List of Lectures for the spring would be issued by the Society of Arts, we departed from our usual arrangement of having only one course, and intended engaging one or two English lecturers for our second course. This, as I have said, we found ourselves unable to do: First, because we were acting alone; the other Institutions in our neighbourhood having already made all their engagements; and it was, therefore, out of the question to expect lecturers residing at a distance to visit us singly, at the rates we could afford to give them. And secondly, because the "Schedule" issued was much less definite in its announcements, and the subjects fewer than from the preliminary circular issued by the Society, we had expected would be the case. We have, therefore, engaged lecturers for this spring in our own locality. As this matter seems, to our Directors and to myself, to be not only of great but of vital importance to the provincial among the united Institutions, you will perhaps pardon me for adding a few words to those which have already appeared in the Society's Journal on the same subject; and, in order that you may know that we do not speak without some experience, I may mention that our Institution, in a town containing a population of about 10,000, has existed (with only two or three years' interruption) since 1827. During a large portion of that period we have supplied to the inhabitants a succession of first-class lecturers; and when an interruption did take place, this arose, not from a disinclination on the part of the inhabitants to give in their support, but from the impossibility of our obtaining lecturers of sufficient talent, and subjects sufficiently varied. The cause of thi- failure becomes evident enough when I state to you that when I first became connected with our Association, about eighteen years since, the usual rate of remuneration to lecturers was about 2*l.* per lecture, including expenses. The enthusiasm connected with the movement then being made for supplying solid information to the works ing-classes was, however, so great, that for a number of years excellent lecturers were obtained, principally from the neighbouring cities of Edinburgh and Glasgow. After a time these could not be had. We were therefore obliged to resort to lecturers of an inferior kind, who quickly brought us to a dead lock—the falling off in the attendances involving us, even at the low rates paid, in considerable difficulties.

Our Directors, in reviving the Institution, determined to try what could be done by giving higher rates of remuneration, at least, for a portion of each course. A gentleman of known eminence was therefore engaged to deliver six lectures (he having previously arranged to be in our neighbourhood), for which he received 25*l.*, including expenses. This course paid, and left a small surplus. Since that period our Institution has had a regular attendance of from 250 to 300, and every course has just about covered the expenses; but a large proportion of our lecturers has been of the first-class, and the amount of valuable information communicated has been very great. The usual rates we have paid have been 3*l.* 3*s.* and 4*l.* 4*s.* per lecture, including expenses; and we have found that gentlemen of the first eminence can be induced to lecture to us at the latter rate,—provided we can take them at times suiting their convenience, and when we can arrange, by uniting with other Institutions, to fill up their time while they are with us. The opinion of our Directors, from all the experience they have had, now is, that, in such Institutions as ours, in order to ensure success, a portion at least of each course must be delivered by gentlemen of first-rate eminence; and I may add, they find it best, in a course, say of ten lectures, to have two or three different lecturers engaged.

Before concluding, will you allow me to say, that it has been usual with Institutions in this locality to arrange, during the summer or autumn, for the whole of the lectures to be delivered in the ensuing winter and spring, and to announce these as one course. Perhaps it might be possible, in future, at once to present such a list of lectures as would allow Institutions either to follow this plan, or to make a division of the winter and the spring courses, as might be found convenient. I would also express a hope that the list of short courses in the next "Schedule" issued by the Society of Arts may be more numerous, and that the subjects may be given more in detail than in that which has been sent to us; and also that the names of the gentlemen who would engage to lecture may be at the same time given, leaving to the different Institutions to correspond, and make their arrangements with the lecturers themselves.

I am, &c. &c.,
G. H.

PROCEEDINGS OF SCIENTIFIC SOCIETIES.

Entomological, Jan. 24.—J. O. Westwood, Esq., President, in the chair. The ballot for four new members of the Council, showed that E. Newman, W. W. Saunders, A. F. Sheppard, and S. Waring, Esqs., were elected in the room of F. Smith, H. T. Stainton, J. J. Weir, and W. Yarrell, Esqs.; and the following were also elected to the respective offices for the ensuing year: E. Newman, Esq., President; S. Stevens, Esq., Treasurer; and J. W. Douglas and W. Wing, Secretaries. The President announced that the Council had received three essays in competition for the prize of 5*l.*, offered by the Society for the best essay on the Duration of Life in the Males, Queen and Workers of the Honey-bee, the determination of which was a matter of great practical importance to the bee-keeper; and that they had awarded the prize to a very able paper, which was afterwards found to be by Mr. Desborough, of Stamford.

PROCEEDINGS OF INSTITUTIONS.

Bishop Stortford.—The members of the Literary Institution gave a soirée on Wednesday evening last, which was attended by about 300 persons, including the principal inhabitants of the neighbourhood. The Assembly-room was crowded with works of art and objects of curiosity. The Rev. T. T. L. Bayliff made a few introductory remarks on the character and usefulness of such meetings, and of the Institution which gave rise to them; after which the Rev. Mr. Jeffries read his Prize Essay on "the Development and Balance of the Mind." A Prize Poem was subsequently read by Mr. Mullinger, jun. The rooms were again thrown open on Thursday.

Bromsgrove.—At the soirée of the Literary and Scientific Institution, held in the National School-rooms, on Wednesday evening, Lord Lyttleton addressed the assembly, remarking that such institutions gave a stimulus to elementary education, at the same time that they gave the adult population the means of finishing their education in their leisure hours.

Carlisle.—On the evening of Tuesday last Major Monins delivered a Lecture at the Mechanics' Institution, on the subject of Maritime Discovery. The lecture occupied an hour and a half in delivery, was well digested, and proved of a highly interesting character. On the conclusion of the lecture, Joseph Ferguson, Esq., M.P., in a few complimentary observations, moved a vote of thanks to Major Monins, which was seconded by Mr. Davidson, and unanimously carried.

Downpatrick.—The Twelfth Annual General Meeting of the members of the Mechanics' Institute was held in the Assembly-room, on the evening of Thursday. the 6th January, for the purpose of electing a Committee of Management for the year 1853. There were about seventy members present; C. W. Ruthven, Esq., occupied the chair. After the Report and balance-sheet for the past year were read and adopted by the meeting, and some alterations made in the laws of the Society, the ballot for the new Committee was proceeded with; and the following officers, with twelve Directors, were declared to be its members. President, D. Harrel, Esq., J. P.; Vice-president, Mr. R. T. Lithgow; Treasurer, Mr. J. Tate, jun.; Secretary, Mr. H. Montgomery. It appeared from the documents submitted to the meeting, that the Treasurer had received during the year 70*l.* 13*s.* 5½*d.*, and disbursed 50*l.* 13*s.* 1*d.*,—leaving a balance in hand of 20*l.* 0*s.* 4½*d.*; and that the total liabilities of the Society would be fully covered by the uncollected subscriptions. Considerable additions had been made to the Library; and several Lectures on popular subjects had been delivered before the members. The Reading-room, which is well supplied with papers and periodicals,—upwards of thirty of the former being laid on the tables weekly,—had been regularly attended by the great majority of the members.

Dunmow.—The Sixth Annual soirée of the Literary and Scientific Institution was held in the Town-hall, on Tuesday evening, the 25th ult.; the Rev. C. Lesingham Smith, the President, in the chair. The party consisted of at least 150 persons, and included a deputation from the Bishop Stortford Institution.

Ely.—A Lecture "On the present condition of the Ely Mechanics' Institution, and the prospects of Mechanics' Institutions in general," was given on Friday evening, the 21st ult., by W. Marshall, Esq., the Honorary Secretary. It appears that the number of members had recently decreased from 100 to 80, and subsequently to 70; but the books had increased from 600 to 1,700.

Halsted.—The Rev. Henry R. Reynolds, B.A., of Leeds, delivered a most interesting lecture at the Assembly-room, on Tuesday evening last, to the members of the Mechanics' Institution, on "The Poetry of Wordsworth." From the philosophic and highly imaginative character of Wordsworth's poetry, it was supposed by some that the evening's entertainment would be but partially appreciated and enjoyed by a popular audience. The lecturer having opened his subject soon dispelled this feeling by a lucid, elegant, and spirit-stirring strain;

and having secured the attention of his audience, he bore them away into the airy realms of Wordsworth's creative fancy, and unfolded with a graceful and masterly hand the glowing beauties that are scattered so profusely on every side. We err if we suppose that only can be instructive and profitable which is received intuitively into the mind, and that those who pretend to enlighten, instruct, and gratify, should invariably cower down to the level of their audience. This would be to make the less elevated satisfied with the crumbs which fall from Nature's table, when by the aid of others, and vigorous self-cultivation, they might rise to its outspread banquet with their more gifted brethren; the excess or perfection of which heightened enjoyment would differ only in degree, according to each individual capacity to enjoy. The lecturer dilated copiously upon the severe and unjust criticism by which Wordsworth's first productions were assailed by the Edinburgh and other critics and reviewers, and how for twenty long years Wordsworth stood smiling in his spirit, in the conscious majesty of his poetic mission and power, calmly and patiently awaiting the judgment and juster appreciation of posterity. It is not always that an author is the best judge of his own productions, or can heroically bear the scourge of a fierce and false criticism that crushes the first offspring of innate genius, and coolly wait for approaching times to receive at its hands an undying verdict in his favour. Wordsworth did this. And the lecturer contrasted his conduct with that of Byron, who writhed and retaliated under the lashes of Jeffery, and also of Keats and others, who suffered severely from their anxiety for immediate fame. He quoted an extract from one of Wordsworth's letters to a lady of eminence in reference to the criticism upon his poetry at that time, which went to show how magnanimously he bore their unequal efforts and ability to decide his fate as a poet; and proceeded to describe in fervid terms how he lived to see from that very emporium of judgment, the leaven of his own poetry giving a bias and a law to their own decisions. Having advanced in this apologetic strain, the lecturer proceeded with some graphic descriptions of Wordsworth's powers as a poet, quoting from more recent criticism in his favour, and interspersing the whole with selected gems of thought and poetry from his works—from his severe and telling power in blank verse—the thrilling note of the nightingale in his sonnet—down to the august simplicity of his minor but exquisitely beautiful pieces. To the defects of Wordsworth he was kind; it was evident "with all his faults he loved him still;" and attributed his supposed defects to a lofty and excessive imagination, while the consequent distance which separated him from others may frequently have rendered him obscure and unintelligible. A vote of thanks was passed with acclamation to the Rev. H. R. Reynolds; and the meeting separated, highly gratified with his excellent lecture.

Hastings.—At noon on Tuesday, the 25th ult. the local exhibition of the Mechanics' Institution was opened, on which occasion all the leading gentry of the neighbourhood were present. The Earl of Waldegrave opened the proceedings with a few remarks on the advance of science. The collection comprised a vast variety of objects of all kinds. On Wednesday and Thursday evenings the exhibition was visited by the members of the St. Leonard's Mechanics' Institute.

Ipswich.—The Twenty-eighth Annual Meeting of the members of the Mechanics' Institution was held in the Lecture-hall on Thursday evening; the Mayor, S. H. Cowell, Esq., occupied the chair. The financial statement and Report of the Committee were read by Mr. Gowing, the Secretary; from the former of which it appeared that there was a balance due to the Treasurer of 43*l*. 14*s*. 5*d*.,—the receipts having been only 416*l*. 15*s*. 11*d*., against an expenditure of 460*l*. 10*s*. 4*d*. In the course of the evening a subscription list was opened, and there is every probability that the deficiency will shortly be liquidated.

Lincoln.—The Nineteenth Annual Report of the Lincoln and Lincolnshire Mechanics' Institution has just been published, from which it appears that the number of members has varied little during the last ten years; although the population has increased about 4,000, the reading body has not been augmented. It having been suggested to the Committee that the introduction of daily and weekly newspapers would not only extend the existing means of acquiring information, but also result in an addition of members, they consulted with some neighbouring Institutions on the subject, and have now determined to adopt the suggestion. The abstract accounts show an income of 213*l*. 4*s*. 2*d*., and an expenditure of 168*l* 14*s*. 3*d*.—leaving a balance of 44*l*. 9*s*. 11*d*. in the hands of the Treasurer.

Longton.—The Annual Meeting of the members of the Athenæum and Mechanics' Institution, was held on the 20th ult., in the New Town-hall; Mr. Bateman in the chair. The report presented was of an extremely gratifying and encouraging character. In accordance with resolutions of the last annual meeting, trustees had been appointed,—the librarian made personally responsible for the safe custody and delivery of property under his care,—and an insurance from loss by fire effected. During the year, also, the Institution had entered into union with several literary, scientific, and mechanics' institutions, from which alliance advantages had already accrued, and more important ones were anticipated. The library had received an addition of 130 volumes; and upwards of 5,000 books and periodicals had been issued to members at their own residences. The cash account quoted the receipts at 213*l*. 14*s*. 10*d*., and disbursements 178*l*. 14*s*. 8*d*; leaving 35*l*. 0*s*. 2*d*. as balance in hand. A statement of operations in the Longton Branch School of Design was also read,—the two Institutions being associated, and under the same Committee of management. The election of officers was then proceeded with. The Hon. F. L. Gower, M.P., and H. Minton, Esq., were added to the list of presidents. In moving the reappointment of the honorary secretary, Mr. G. L. Robinson offered a well-merited tribute of praise to the ability, zeal, and uniform courtesy displayed in his official capacity by Mr. Goddard, who had been connected with the Institution from its infancy, and to whose efforts it was mainly indebted for its present mature and prosperous condition. The following resolution, submitted by Mr. G. L. Robinson, was approved by a majority of the meeting: "That a sum of 20*l*. be appropriated out of the funds towards the formation of a reserve fund, for the future purposes of the Institution, to be under the control of the members at a general meeting, and in the meantime invested as the Committee in their wisdom may determine."

Nottingham.—The Annual Meeting of the members of the Mechanics' Institution, for the election of officers and the transaction of other business, was held on Monday the 24th ult., Mr. A. Morley, Vice-president, in the chair. The Report, which was read by the Honorary Secretary, Mr. E. Renals, entered very fully into the particulars of the several departments of the Institution—its Library, Lectures, and Expenditure—and was unanimously adopted. The ballot for officers followed.

Radcliffe Bridge.—The Second Annual Meeting of the members of the Radcliffe and Pilkington Lyceum and Mutual Improvement Society was held on Monday evening, the 10th inst. It appears that in consequence of the unfortunate difference between the mill operatives (who compose the greater portion of the members) and their employers, the classes for instruction had been discontinued for some months; yet the reading-room had been generally well attended. The Directors, however, hope again to resume the usual course of instruction, and thereby carry out the principles of the Institution with advantage to the class sought to be benefited, and with satisfaction to themselves. R. N. Philips, Esq., of the Park, Pilkington, was elected President.

Royston Mechanics' Institute.—On Tuesday and Wednesday, the 11th and 12th ult., two lectures on "Music as applied to Religion," were delivered for this Institution by Charles Steggall, Esq., Mus. Doc. Trin. Coll. Cambridge, Secretary of the Bach Society, &c. The lectures were historical, of a most instructive and interesting character, and they were listened to with great attention by large and respectable audiences. The period allotted to him being so short, Dr. Steggall could do no more than give a brief sketch of music as connected with religion from the earliest ages to recent times. The vocal illustrations were performed by the members of the Royston Choral Society, whose services were gratefully acknowledged at the conclusion of the lectures by Dr. Steggall.

Sudbury.—On Tuesday evening, 25th ult., the Rev. J. C. Coleman delivered a very instructive Lecture "On the Danes in England, a chapter in the History of our own Land." The Rev. lecturer entered fully into the ancient mythology of the Scandinavians, the manners and customs of the early inhabitants of Northern Europe, the several invasions of England by the Danes, and showed that in our character, language, customs, names of places, &c., there were undoubted proofs of Danish origin; concluding with an earnest hope that every one would seek after truth by diligent reading, and endeavour to learn something of the history of their own country.

Swindon.—The Annual Soirée of the Mechanics' Institution was held on Friday last, in the large room of the Great Western Railway Company's works, and was attended by nearly the entire community of this great centre of manufacturing industry, who form quite a colony of mechanics in the midst of an agricultural population, and exhibit the contrast of character usually observable in such cases. The great point of attraction was a collection of models of machines in motion, the work of certain of the men during their leisure hours.

Tenterden.—Two lectures, in connection with the Mutual Improvement Society, were delivered, "On Nineveh," by the Rev. C. Kirtland of Canterbury, on Tuesday and Wednesday evenings, 25th and 26th January. Numerous diagrams were suspended in the room, representing the scenes and labours of Layard and others, and illustrating the habits and customs of the Assyrians. The object of the lecturer was, to exhibit the historical value and trustworthiness of the Scriptures as a WHOLE, in opposition to what is popularly termed infidelity. The lecturer gave great satisfaction to a numerous audience on both evenings.

Thame.—A lecture on Moral Philosophy was recently delivered to a large and highly respectable attendance of the members and friends of the Mutual Improvement Society, by H. Lupton, Esq. The lecturer detailed the opinions of Plato and the ancients on the subject, comparing and contrasting them with the morality of the Bible. Instances of individuals famous in ancient and modern times for great virtues or great vices were adduced in illustration. The lecturer concluded with a lengthened application of sound principles of morals to the whole circle of human relationship and obligation.

Wandsworth.—The First Soirée of the members and friends of the Literary and Scientific Institution was held on Tuesday, the 18th ult. The chair was taken by the Rev. H. Moseley, who, in a most impressive speech, pointed out the great benefits likely to occur to society at large from Mechanics' and similar Institutions. In the course of the evening short speeches were made by Dr. Longstaff, Mr. A. Coleman, Mr. H. Gore, Mr. D. Nicholson, Mr. M. Blackmore, Mr. R. Speed, and Mr. C. Pearson,—the latter of whom, at the request of the meeting, gave a short explanation of his Central Railway Terminus and City Improvements. illustrated by some valuable models and diagrams. A most extensive collection of interesting objects was exhibited, many of which were working models; and a serie, showing the difference of gas attracted much attentions as did also some photographs and other works of art, Between 400 and 500 persons attended, and all expressed themselves much gratified with the entertainments.—The rooms were again opened on the following Friday.

Wandsworth.—The Second Series of Lectures of the present Session of the Literary Institution commenced on Tuesday, the 25th ult., when a lecture was delivered by Mr. H. Gore, "On the Engineering Achievements of the Nineteenth Century." In introducing the subject the lecturer took a hasty glance of the works of the Ancients, especially the roads and aqueducts of the Romans. He then briefly alluded to some of the castles and bridges built during the Middle Ages, pointing out the peculiar ability displayed in their construction. In treating on the immediate subject of the lecture, Mr. Gore gave a detailed account of the most important docks, tunnels, breakwaters, bridges, &c., completed during the present century; also a particular description of the mode of constructing the principal railways. In referring to the application of iron to various engineering structures, a lucid description was given of the Britannia and Conway tubular bridges. Under the division of mechanical engineering, the lecturer described several interesting machines, and among them the steam-hammer. The principal points of the lecture were admirably illustrated by the aid of a great number of splendid diagrams, prepared by the lecturer expressly for the occasion.

Workington.—The Annual General Meeting of the members of the Mechanics' Institution was held on Tuesday evening, the 25th ult. After a Report, showing the favourable progress of the Institute, and a statement of accounts for the past year had been read, the Rev. H. Curwen was unanimously re-elected President; and W. L. Dickenson, Esq., C. Brown, Esq., T. Falcon, Esq., with the addition of C. Lamport, Esq., were re-elected Vice-presidents; Mr. John Fisher was chosen Treasurer; and the following members were then balloted for the Committee: Mr. Thomas Harrison, Mr. J. W. Russell, Mr. J. Peat, Mr. J. S. Fawcett, Mr. J. Hornsby, Mr. J. Carter, jun., Dr. A. Peat, Mr. J. Jackson, and Mr. J. Penrice, jun.;—these were all re-elected. Mr. J. Askew and Mr. W. Thompson, jun.; Mr. H. Bowes and Mr. J. Cape were re-elected Auditors. The Library contains above 1,000 valuable and well-selected volumes, and the reading-room is well supplied with daily and other newspapers, periodicals, &c.

TO CORRESPONDENTS.

Notice.—Members, and others, who can furnish or obtain original information or suggestions on the subjects included in the Society's Premium-list, or other topics connected with the Society's various departments of operation, are invited to communicate the same to the Secretary, in as condensed a form as possible, for the purpose of being either read and discussed at the evening meetings, or inserted in the Society's weekly Journal. Anonymous letters cannot be attended to. All communications, whether the author's name is to appear or not, must be accompanied by the writer's name and address.

Country Institutions.—Correspondents who are so good as to send reports of proceedings of Local Institutions, are requested to forward them immediately after the Meeting to which they refer, and not later than Tuesday morning, if intended for insertion in the following Friday's Journal.

A neat Case, for holding the Numbers of the Journal for half a year, is now ready, and may be had of the Publisher, 186, FLEET-STREET, price 1s. 8d.

QUESTIONS FROM CORRESPONDENTS.

Green Walls.—Can any of your correspondents tell me of an effectual mode of preventing the growth of confervæ on walls, covered with cement, in damp situations? I have made several unsuccessful attempts to prevent cement from becoming green under these circumstances. [No. 29.]

Glenfield Starch.—What is the process used in the preparation of Glenfield Patent Starch, and when was the patent taken out? [No. 30.]

ANSWERS TO CORRESPONDENTS.

Book-indexing.—In answer to correspondent (No. 28), I beg to state that there is no objection to colouring the edges of directories, or other works of reference, different hues, save a slight increase in the cost of binding. It has often been done. Letter-press printing has been attempted upon the edges of volumes, but without success. Letters may be impressed (singly) upon the edges of books by the binder, as upon the backs.

Brewing.—Have any attempts been made to condense and save the large quantity of aromatic vapour given off during the boiling of beer? It is evident from the very fragrant odour of the steam which escapes from breweries, that a considerable part of the volatile flavouring matter both of the hops and of the malt is lost. [No. 31.]

Rendering Fats.—When were steam tanks first introduced into the manufacture or rendering of fats; were they employed before the date of E. Wilson's patent, either in America or elsewhere; and has any important improvement in the make or working of them been subsequently made? [No. 32.]

Red Ebony.—In the South African Department of the Great Exhibition, there was a small specimen of a hard red wood named red ebony, which seemed well suited for turnery purposes, and which I see by the Jury Report was deemed worthy of a prize medal; I cannot meet with this wood at any of the dealers, and should feel obliged for any information as to where it may be procured? [No. 33.]

Printers' Types (No. 27).—The Patent Wire Type Company exhibited at the Crystal Palace type formed by mechanically compressing wire, and not by melting the metal, as in the ordinary process of type-founding. Wire type is stated to be much more durable than ordinary type. I send you a few words printed from the Company's type; their office is at No. 1, Guildhall-chambers, Basinghall-street.

MISCELLANEA.

NEW CRYSTAL PALACE, SYDENHAM.—During the late discussions on Patent Law Reform, both in and out of Parliament, much stress was laid on the want of some permanent place where models, machinery drawings, specimens, &c., of new inventions, might be deposited for exhibition. It was felt on all sides that such depositary was of great importance both to inventors and the public generally. We, some time since, noticed that the Crystal Palace Company had taken this subject into consideration, and had determined to organize a department in their building to supply this want. It is gratifying to know that most satisfactory arrangements are being made for the purpose, and the "Court of Inventions" promises to form not only a very attractive, but a very useful and instructive portion of the varied display. Everything, so far as we can learn, is being done to render this Court appropriate for models, &c., and perfectly free from damp or wet. The experience of the defects of the old but temporary building in Hyde-park has been most valuable on this head, whilst the permanent character of the present building, the improvements adopted in the glazing and other matters, make the task of remedying them comparatively easy, and there is no reason to doubt that the Court of Inventions can and will be perfectly dry, and in every way adapted for the reception of the most delicate models.

LECTURES TO WORKING MEN.—The Professors at the Government School of Mines, last year, commenced the experiment of delivering a set of Lectures to Working Men, which were exceedingly popular. It has been thought advisable this session to give more completeness to the system; so that some considerable amount of instruction in the sciences might be communicated to the artizans. Thus it has been arranged, that a course of six lectures shall be given on the "Applications of Physical Science;" and two courses of six each, on the "Elements of Geology and of Natural History." The admission to these lectures is obtained by each man paying a registration fee of sixpence, at the time of entering his name and trade, for each course. This sum is not nearly sufficient to defray the ordinary expenses of each lecture. The duties of the lecturers are voluntary and entirely gratuitous; the only reason for the registration fee being to ensure the attendance of such men only as are desirous of profiting by the information given.

PATENT LAW AMENDMENT ACT, 1852.

Our readers are aware that by the late Act it is provided that the Commissioners of Patents shall cause to be printed, published, and sold, all specifications, &c., deposited or filed in their office; provisional specifications not till after the expiration of the period of protection, but all other specifications *as soon as conveniently may be* after the filing them. Now, although there have been filed between thirty and forty complete specifications, and some of them so long back as the month of October last, not one of them has yet been printed. There is no valid reason for this neglect, unless it be the faulty constitution of the Commission, there being but one permanent member, all others changing with a change of government. Every specification might, without any difficulty (except perhaps in some few instances), have been at once placed in the printer's hands, and by the end of a week after its filing, the printed copy might have been published and sold. They should be printed of a uniform size, convenient for use, and not in the old-fashioned, clumsy official Act of Parliament and Blue Book size; and if paged consecutively, might be bound up in a volume, with index and title-page, as soon as a sufficient number are issued. This should have been done at once. If the provision was considered of such importance as to be inserted in the act (and we believe it a very valuable and important provision), why are the public deprived of its benefit? "As soon as conveniently may be," must not be interpreted "as inconveniently as possible for the public." Although the number of specifications filed is small at present, yet in a few months they will necessarily pour into the office in scores, and unless some provision for their printing is very shortly made, and the matter put in train, very considerable inconvenience must arise from the neglect. There have been already received from fees in respect of patents not less than 12,000*l.* under the new act, and the public will not be slow to believe that they have some claim in return, to have the Patent Act fairly and efficiently carried out.

APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

From Gazette, 28th Jan., 1853.

Dated 6th Jan., 1853.

40. W. Beales—Fire-proof cement.

Dated 7th Jan.

46. W. C. Scott—Improvements in wheels.

Dated 8th Jan.

59. F. Parker—Improvements in boots and shoes and spatterdashes, termed antigropelos.

Dated 11th Jan.

69. J. Beattie—Economising fuel in generating steam.
71. H. C. Jennings—Separating fluid parts of fatty and oily matters.
73. J. R. W. Atkinson—Machinery for spinning flax, &c.
75. J. Petrie and S. Taylor—Apparatus for washing wool.

Dated 12th Jan.

77. J. M'Dowall—Cutting and reducing wood, &c.
79. J. Hick—Lubricating revolving shafts and their pedestals.
80. J. Fletcher—Machinery for spinning, &c., cotton, wool, &c.
81. W. B. Nation and J. Dyer—Manufacture of soap.
83. G. A. Huddart—Manufacture of artificial leather.
83. W. Nairne—Reeling yarns.
86. E. Haslewood—Firearms and projectiles. (A communication.)
87. J. Cupper and T. J. Watson—Bleaching jute, &c.
89. J. Bennett and C. Charlesworth—Improvements in doffing and preparing rovings of wool.

Dated 13th Jan.

90. M. Cartwright—Manufacture of gypsum.
92. W. Brown—Treating coal, &c., and their volatile products.
93. J. Rumley—Improvements in pumps.
94. E. W. Wren—Manufacture of bricks, pipes, tiles, imitation stone and peat, bricks for fuel, by means of a machine entitled, "A Central Circular and Horizontal Motion."
95. G. Fife, M.D.—Protecting vessels and surfaces from injury and decay.
96. J. W. Wilkins—Electric telegraphs.

Dated 14th Jan.

97. J. Lillie—Machinery for malting, drying, and seasoning grain, &c.
98. R. Taylor and H. H. Salt—Manufacture of spoons and ladles.
99. A. James—Improvements in means of inclosing needles.
100. J. H. Vries, M.D.—Motive power.
101. W. Steads—Blinds, maps, &c., wound on rollers.
102. F. J. Bramwell and J. Baggs—Machinery for driving piles, hammering, stamping, and crushing.

Dated 15th Jan.

103. J. S. Kincaid—Registering numbers entering and quitting omnibuses, &c., and other places.
105. E. Tasker—Writing and drawing tube.
107. J. H. Young—Brooms and brushing apparatus.
108. P. A. Halkett—Improved construction of inkstand.
109. J. Arrowsmith—Pumping machinery.

Dated 17th Jan.

110. T. Potts and J. S. Cockings—Manufacture of tubes, &c.
111. T. C. Ryley and E. Evans—Wrought-iron wheels for railways, &c., and the machinery for same.
112. A. Yorston—Construction of railways.
113. W. Nairne—Improvements in power-looms.
114. A. E. L. Bellford—Manufacture of "batting," or "wadding." (A communication.)
115. A. E. L. Bellford—Blocks for printing music. (A communication.)
117. H. H. Henson and F. Henson—Signalizing on railways, &c.
118. A. E. L. Bellford—Motive power.

Dated 18th Jan.

119. C. Binks—Electric light.
120. J. T. Manifold and C. S. Lowndes—Improvements in steam-engines.
121. H. Browning—Compositions for coating iron, ships' bottoms, &c.
123. O. Reeves—Manufacture of manure.
124. A. V. Newton—Improved sewing machine.
125. P. Fairbairn and S. R. Mathers—Machinery for drawing sliver and rove of flax, hemp, and tow.
126. T. S. J. and T. Lees—Apparatus for admitting water to boilers.
127. J. Sherringham—Improvements in stove-grates.
128. R. Neale—Improvements in process of copper and other plate printing, and in inking, wiping, &c.

Dated 19th Jan.

130. S. Smirke—Signals on railways.
132. W. F. Snowden—Improved mangle.
134. T. Judge—Propelling vessels.
136. J. Maudslay—Improvements in steam-engines, applicable to pumps, &c.

APPLICATIONS WITH COMPLETE SPECIFICATIONS FILED.

145. G. E. Gazagnaire—Manufacture of fishing-nets. (A communication.) Jan. 20, 1853.
182. W. F. Shattuck—A smut-machine. (A communication.) Jan. 25, 1853.
184. T. Ovans—Manufacture of boots. Jan. 25, 1853.

WEEKLY LIST OF PATENTS SEALED.

Sealed 27th Jan., 1853.

384. Joseph Henry Tuck, of Pall Mall—Improvements in stuffing-boxes, and in packing to be used in stuffing-boxes, bearings, pistons, and valves.
456. Anthony Liddell, of Canterbury—Improvements in stuffing-boxes, and in packing to be employed with stuffing-boxes and pistons.
716. Richard Barnes, of Wigan—Improvements in cocks or plugs for water or other fluids.
758. William Edward Newton, of 66, Chancery-lane—Improvements in knitting-machinery. (A communication.)

Sealed 29th Jan.

62. John Sayers, of 6, Prospect-place, Poplar—Improved arrangements for maintaining a level surface or level surfaces upon or in connection with bodies subject to a rocking motion.
233. William Crook, of Blackburn—Improvements in looms.
378. Preston Lumb, of Vauxhall—Improvements in apparatus for cleansing coal.
587. James Rock, the younger, of Hastings—Improvements in railway carriages.
721. Caleb Bloomer, of West Bromwich—Improvements in the manufacture of anchors.
895. Emile Martin, of Paris, and 4, South-street, Finsbury—Improvements in the mode of extracting gluten from wheat, and for preparing and drying the same by mixing to several degrees of concentration.
915. Samuel Clark, of 55, Albany-street, Regent's-park—Improvements in lamps.
932. William Taylor, of 16, Oxford-terrace, Hyde-park—Improvements in propelling ships and other floating bodies.
962. William Maugham, of Ilfield-terrace, Surrey—Improvements in rendering wood fireproof.
991. Thomas Lovell Preston, of Birmingham—Invention of a machine for making links for chains.
1011. Edward Thomas Loseby, of Gerrard-street, Islington—Improvements in the construction of timekeepers, and in cases to be applied thereto.
1013. George Collier, of Halifax, Yorkshire—Improvements in the manufacture of carpets and other fabrics.
1022. Thomas Boardman, of Pendleton—Improvements in looms for weaving.
1031. George Dixon, of Birmingham—Improvements in the manufacture of and refining sugar.
1036. Josiah Glasson, of the Soho Foundry, near Birmingham—Improvements in boilers.
1045. Henry Clayton, of the Atlas-works, Upper Park-place, Dorset-square—Improvements in the manufacture of bricks.
1051. John Webb, of Coventry—Improvements in ornamenting enamel watch-dials.

Sealed 2nd Feb.

767. John Ramsbottom, of Longsight, near Manchester—Improvements in steam-engines.
978. James Smith, of 2, Little Canterbury-place, Lambeth-walk—Improvements in paving roads and other surfaces.
994. Henry Jenkins, of 11, Spencer-street, Birmingham—Improvements in the manufacture of bracelets, brooches, and other articles of jewellery.
1000. James Lawrence, of Westminster—Improvements in the manufacture of projectiles.
1012. Charles Greenway, of Cheltenham—Improvements in anchors.
1032. Timothy Morris, of Birmingham, and William Johnson, of Warkwood-heath, near Birmingham—Improvements in depositing alloys of metals.
1034. John Thomas Way, of Holles-street, Cavendish-square, and John Manwaring Paine, of Farnham—Improvements in the manufacture of glass.
1044. David Napier, of Millwall—Improvements in steam-engines.
1046. William Henry Fox Talbot, of Lacock Abbey, Wiltshire—Improvements in obtaining motive power.

WEEKLY LIST OF DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

Date of Registration.	No. in the Register.	Title.	Proprietor's Name.	Address.
Jan. 27	3414	Onion's Improved Extra-blast Telegraph Wire-welding Forge.	John C. Onions	Bradford-st., Birmingham.
,, 28	3415	Stokes's Portable Camera.	Philip H. De la Motte	Chepstow-pl., Westbourne-gr.
,, ,,	3416	Ploughshare.	William Leggett	Derrythorpe, Lincolnshire.
Feb. 1	3417	An Improved Pole and Bolster for Railway and other Trucks.	William Eassie	Gloucester.
,, ,,	3418	A Sight for Rifles, Pistols, &c.	Witton, Daw, and Co.	57, Threadneedle-street, City.